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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,394	09/01/2000	Susumu Yasuda	35.C14758	6267

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EXAMINER

ALLEN, DENISE S

ART UNIT PAPER NUMBER

2872

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/654,394

Applicant(s)

YASUDA ET AL.

Examiner

Denise S Allen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 7-10, 12-15, 17-20, 22-25 and 27-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11, 16, 21 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

It is noted that for the restriction requirement in the Office Action on February 14, 2003 (paper #7), claims 1 – 5 link(s) inventions I, II, and III. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), claims 1 – 5. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Applicant's election with traverse of Invention I (claims 6, 11, 16, 21, and 26) in Paper No. 8 is acknowledged. The traversal is on the ground(s) that all of the claims could be searched by one Examiner without undue effort (page 2). This is not found persuasive because Inventions I and II are distinct for the reasons given in the Office Action on February 14, 2003 (paper #7) and have acquired a separate status in the art as shown by their different classification; also because Inventions I and III are distinct for the reasons given in the Office Action on February 14, 2003 (paper #7) and have acquired a separate status in the art as shown by their different

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classification; and lastly because Inventions II and III are distinct for the reasons given in the Office Action on February 14, 2003 (paper #7) and the search required for the limitations of Invention II is not required for the limitations of Invention III; therefore the restriction for examination purposes as indicated is proper..

The requirement is still deemed proper and is therefore made FINAL.

Claims 7 – 10, 12 – 15, 17 – 20, 22 – 25, and 27 – 30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

Claim Objections

Claims 1 – 6, 11, 16, 21, and 26 are objected to because of the following informalities:

✓ the limitation “a projection and a depression perpendicular to their respective displacement directions” (claim 1 lines 10 – 11) is unclear because the projections and depressions shown in the Figures are parallel to the displacement direction and because it appears to refer to the movement of both the stator and the movable element and only the movable element is claimed to be movable. Suggested correction: replace the limitation “perpendicular to their respective displacement directions” with “parallel to the displacement direction of the movable element”. For the purposes of examination the limitation “a projection and a depression perpendicular to their respective displacement directions” is interpreted to mean an arrangement of projections and depressions as shown in Figure 1). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Witschi et al (GB 2156590 A).

Regarding claim 1, Witschi et al teaches an electromagnetic actuator (Figure 3b) comprising: a core (reference 13) with a coil (reference 19) wound around; a stator (references A, B, and A') magnetically coupled at both ends of said core; a movable element (reference 23) that can be displaced relative to said stator; and a supporting means for supporting said movable element (Figure 4 reference 45), wherein said stator and said movable element each have a projection and a depression (Figure 3b references 21 and 25) perpendicular to their respective displacement directions and are placed in such a way that the projection and depression of said stator engage with the projection and depression of said movable element.

Regarding claim 2, Witschi et al teaches the supporting means and the stator are fixed onto a substrate (Figure 4 the rod extending upward from reference 35).

Regarding claim 3, Witschi et al teaches the supporting means, the stator, and the movable element are made of the same material (page 4 lines 22 – 23, 31 – 32, and 46).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 21, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jerman et al (US 6329737 B1) in view of Witschi et al.

Regarding claims 1 and 4, Jerman et al teaches an electrostatic actuator comprising a stator (i.e. Figure 5 reference 426); a movable element (references 436 and 431) that can be displaced relative to said stator; and a supporting means (references 437 and 438) for supporting said movable element, wherein said stator and said movable element each have a projection and a depression (references 427 and 432) perpendicular to their respective displacement directions and are placed in such a way that the projection and depression of said stator engage with the projection and depression of said movable element; wherein said supporting means is a parallel hinge spring (references 437 and 438) made up of a plurality of flat springs combined in parallel, and the projections and depressions of said stator and the projections and depressions of said movable element are formed like comb-teeth parallel to the direction of movement of said parallel hinge spring. Jerman et al does not teach an electromagnetic actuator with a core with a coil wound around and magnetically coupled to the stator.

Witschi et al teaches an electromagnetic actuator as described above. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the electromagnetic actuator of Witschi et al in the actuator of Jerman et al in order to move the movable element in two directions (attracting and repelling) with one stator instead of two stators.

Regarding claims 1 and 5, Jerman et al teaches an electrostatic actuator comprising a stator (i.e. Figure 3 reference 226); a movable element (reference 231) that can be displaced

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relative to said stator; and a supporting means (reference 256) for supporting said movable element, wherein said stator and said movable element each have a projection and a depression (references 227 and 251) perpendicular to their respective displacement directions and are placed in such a way that the projection and depression of said stator engage with the projection and depression of said movable element; wherein said supporting means is a concentric hinge spring (reference 256) combining a plurality of flat springs (references 213 and 214) in a concentric radial form, and the projections and depressions of said stator and the projections and depressions of said movable element are formed in a concentric form around the center of rotation of said concentric hinge spring. Jerman et al does not teach an electromagnetic actuator with a core with a coil wound around and magnetically coupled to the stator.

Witschi et al teaches an electromagnetic actuator as described above. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the electromagnetic actuator of Witschi et al in the actuator of Jerman et al in order to rotate the movable element in two directions (attracting and repelling) with one stator instead of two stators.

Regarding claim 21, Jerman et al teaches a movable mirror (Figure 5 reference 403).

Regarding claim 26, Jerman et al teaches a movable mirror (Figure 3 reference 202).

Claims 6, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witschi et al in view of Jerman et al.

Witschi et al teaches an electromagnetic actuator as described above. Witschi et al does not teach an optical scanner with a movable mirror.

Jerman et al teaches an optical scanner (Figure 5) with a movable mirror (reference 403). It would have been obvious to one of ordinary skill in the art at the time of the invention to use

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the mirror of Jerman et al with the electromagnetic actuator of Witschi et al in order to scan a light beam.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (703) 305-7407. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

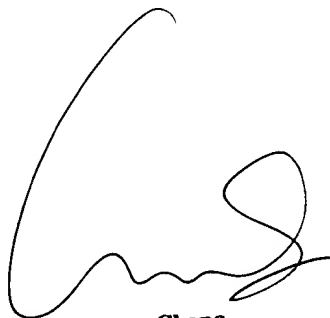
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Denise S Allen
Examiner
Art Unit 2872



dsa

April 7, 2003



**Audrey Chang
Primary Examiner
Technology Center 2800**